

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

*In re* application of:

Kayyem

Serial No.: To Be Assigned

Filing Date: October 29, 2003

For: *TISSUE COLLECTION DEVICES  
CONTAINING BIOSENSORS*

Examiner: To Be Assigned

Art Unit: To Be Assigned

Express Mail No: EV 29898105 US

**INFORMATION DISCLOSURE STATEMENT  
AND  
STATEMENT OF RELATEDNESS**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and in accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98, Applicant wishes to draw the attention of the U.S. Patent and Trademark Office to the references cited on the accompanying form PTO-1449. Since copies of the references were provided either by the Applicant or the Examiner in the following related U.S. Application: Serial No.09/472,657, filed December 27, 1999, upon which the instant application relies for its priority date, in accordance with 37 C.F.R. § 1.98(d), no copies of these references are enclosed.

In addition, Applicant wishes to draw the attention of the U.S. Patent and Trademark Office to the references cited, previously not disclosed in the following related U.S. Application Serial No.09/472,657, filed December 27, 1999, on the accompanying form PTO-1449 marked with an asterisk (\*). Copies of the references are enclosed.

With respect to patent applications, the applicants point out their duty under M.P.E.P. §2001.06(b) to disclose relevant patent applications of which they are aware. To this end, the applicants draw the Examiner's attention to the following patent applications:

1. U.S.S.N. 08/873,978, filed June 12, 1998;
2. U.S.S.N. 09/577,577, filed April 21, 2000;
3. U.S.S.N. 09/135,183, filed August 17, 1998;
4. U.S.S.N. 08/873,597, filed June 12, 1997;
5. U.S.S.N. 09/452,277, filed February 3, 1999;
6. U.S.S.N. 09/245,105, filed January 27, 1999;
7. U.S.S.N. 09/096,593, filed June 12, 1998;
8. U.S.S.N. 10/016,416, filed December 10, 2001;
9. U.S.S.N. 09/295,691, filed April 21, 1999;
10. U.S.S.N. 09/238,351, filed January 27, 1999; and
11. U.S.S.N. 09/621,275, filed July 20, 2000.

None of the foregoing references is believed to disclose the invention as claimed. Nothing herein shall constitute an admission concerning the contents of any of the cited references, nor shall the inclusion of a reference herein be considered an admission that the reference constitutes prior art against the invention claimed in the above-identified application.

Submission of the present document shall not be construed as an admission that a search has been made or that better art does not exist.

As far as is known to the undersigned, this Information Disclosure Statement is being filed within three months of the filing date of a national application, within three months of the date of entry of the national state in an international application, or before the mailing date of a first Office Action on the merits as set forth in 37 C.F.R. § 1.97(b), and therefore no fee is required.

While no fee is believed to be due, if this belief is in error the Commissioner is authorized to charge any additional fees, including extension fees or other relief which may be required, or credit any overpayment to Deposit Account No. 50-2319 (Our Order No. 463077-292 [A-67499-2/RMA/JML]).

Please direct any calls in connection with this application to the undersigned at (415) 781-1989.

Respectfully submitted,  
DORSEY & WHITNEY LLP

Dated: 10/29/03  
Dorsey & Whitney LLP  
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Renee Kossak, Reg. No. 47,717 for  
Robin M. Silva, Reg. No. 38,304

Customer Number: 32940

Attachments:

Form PTO/SB/8A-B, Substitute for form PTO 1449  
Nine (9) References

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Substitute for form 1449A/PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
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			Group Art Unit	To Be Assigned	
			Examiner Name	To Be Assigned	
Sheet	1	of	11	Attorney Docket Number	A-674992-2/RFT/RMS/RMK

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	U.S. Patent Document Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	4,704,193	11-03-1987	Bowers et al.	
	A2	4,707,352	11-17-1987	Stavrianopoulos	
	A3	4,707,440	11-17-1987	Stavrianopoulos	
	A4	4,711,955	12-08-1987	Ward et al.	
	A5	4,755,458	07-05-1988	Rabbani et al.	
	A6	4,787,963	11-29-1988	MacConnell	
	A7	4,840,893	06-20-1989	Hill et al.	
	A8	4,849,513	07-18-1989	Smith et al.	
	A9	4,868,103	09-19-1989	Stavrianopoulos et al.	
	A10	4,894,325	01-16-1990	Englehardt et al.	
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	A13	4,952,685	08-28-1990	Stavrianopoulos	
	A14	4,994,373	02-19-1991	Stavrianopoulos	
	A15	5,002,885	03-26-1991	Stavrianopoulos	
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	A17	5,082,830	01-21-1992	Brakel et al.	
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	A34	5,552,270	09-03-1996	Khrapko et al.	
	A35	5,565,552	10-15-1996	Magda et al.	

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	A36	5,571,568	11-05-1989	Ribi et al.	
	A37	5,573,906	11-12-1996	Bannwarth et al.	
	A38	5,591,578	01-07-1997	Meade et al.	
	A39	5,595,908	01-21-1997	Fawcett et al.	
	A40	5,601,982	02-11-1997	Sargent et al.	
	A41	5,603,711	02-18-1997	Parins et al.	
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	A52	5,780,234	07-14-1998	Meade et al.	
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	A70	6,177,250	01-23-2001	Meade et al.	

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	A71	6,180,352	01-30-2001	Meade et al.	
	A72	6,200,761	03-13-2001	Meade et al.	
	A73	6,203,758	03-20-2001	Marks et al.	
	A74	6,207,369	03-27-2001	Wohlstadter et al.	
	A75	6,221,583*	04-24-2001	Kayyem et al.	
	A76	6,232,062*	05-15-2001	Kayyem et al.	
	A77	6,238,870	05-29-2001	Meade et al.	
	A78	6,479,240*	11-12-2002	Kayyem et al.	
	A79	6,495,323*	12-17-2002	Kayyem et al.	
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	A81	6,600,026*	07-29-2003	Yu	

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	B1	CA 2 090904	09-1993			
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	B3	EP 0 229943	07-1987			
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	B5	EP 0 599337	01-1994			
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	B8	JP 238,166	1988		Abstract (63-238166)	
	B9	JP 6-41183	02-1994			
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	B11	WO 90/05732	05-1990			
	B12	WO 92/10757	06-1992			
	B13	WO 93/10267				
	B14	WO 93/22678	11-1993			
	B15	WO 93/23425	11-1993			
	B16	WO 94/22889	10-1994			

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**FOREIGN PATENT DOCUMENTS**

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	B17	WO 95/15971	06-1995			
	B18	WO 96/40712	12-1996			
	B19	WO 96/40712	12-1996			
	B20	WO 97/01646	01-1997			
	B21	WO 97/27329	07-1997			
	B22	WO 97/31256	08-1997			
	B23	WO 97/41425	11-1997			
	B24	WO 97/44651	11-1997			
	B25	WO 98/20162	05-1998			
	B26	WO 98/20162	05-1998			
	B27	WO 98/27229	06-1998			
	B28	WO 98/27229	06-1998			
	B29	WO 98/28444	07-1998			
	B30	WO 98/35232	08-1998			
	B31	WO 98/51823	11-1998			
	B32	WO 98/57159	12-1998			
	B33	WO 98/57319	11-1999			
	B34	WO 99/14596	03-1999			
	B35	WO 99/29711	06-1999			
	B36	WO 99/37819	07-1999			
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>	
	C1	Affirm VP III, Microbial Identification Test, for in Vitro Diagnostic use, Catalog No. 4406252 (1996).		
	C2	AIZAWA et al., "Integrated Molecular Systems for Biosensors," Sensors and Actuators B, B@S (Nos 1/3) Part 1:1-5 (March 1995).		
	C3	ALBERS et al., "Design of Novel Molecular Wires for Realizing Long-Distance Electron Transfer," Biochemistry and Bioenergetics, 42:25-33 (1997).		
	C4	ALLEMAN, K.S. et al., "Electrochemical Rectification at a Monolayer-Modified Electrode," J. Phys. Chem., 100:17050-17058 (1996).		
	C5	ARKIN et al. "Evidence for Photoelectron Transfer Through DNA Intercalation," J. Inorganic Biochem. Abstracts, 6th International Conference on Bioinorganic Chemistry, 51(1) & (2):526 (1993).		
	C6	"Biotechnology and Genetics: Genetic Screening Integrated Circuit," The Economist (February 25-March 3, 1995).		
	C7	BAMDAD, C. "A DNA self-assembled monolayer for the specific attachment of unmodified double - or single stranded DNA," Biophysical Journal, 75:1997-2003 (1988).		
	C8	BARISCI et al., "Conducting Polymer Sensors," TRIP, 4(9):307-311 (1996).		
	C9	BAUM, R. M., "Views on Biological, Long-Range Electron Transfer Stir Debate," C&EN, pp 20-23 (1993).		
	C10	BECHTOLD, R. et al., "Ruthenium-Modified Horse Heart Cytochrome c: Effect of pH and Ligation on the Rate of Intramolecular Electron Transfer between Ruthenium(II) and Heme(III)," J. Phys. Chem., 90(16):3800-3804 (1986).		
	C11	BIDAN, "Electroconducting conjugated polymers: new sensitive matrices to build up chemical or electrochemical sensors. A Review.," Sensors and Actuators, B6:45-56 (1992).		
	C12	BLONDER et al., "Three-dimensional Redox-Active layered Composites of Au-Au, Ag-Ag and Au-Ag Colloids," Chem. Commun. 1393-1394 (1998).		
	C13	BOGUSLAVSKY, L. et al., "Applications of redox polymers in biosensors," Solid State Ionics, 60:189-197 (1993).		
	C14	BOWLER, B. E. et al., "Long-Range Electron Transfer in Donor (Spacer) Acceptor Molecules and Proteins," Progress in Inorganic Chemistry: Bioinorganic Chemistry, 38:259-322 (1990).		
	C15	BRODOLIN, K. et al., "Conformational changes in E.Coli RNA Polymerase During Promoter Recognition," Nucleic Acids Research, 24(24):5748-5753 (1993).		
	C16	BRUN, A. M. et al., "Photochemistry of Intercalated Quaternary Diazaaromatic Salts," J. Am. Chem. Soc., 113:8153-8159 (1991).		
	C17	BUMM, et al., "Are Single Molecular Wires Conducting?," Science 271:1705-1707 (1996).		
	C18	CANTOR, C.R. et al., "Report on the Sequencing by Hybridization Workshop," Genomics, 13:1378-1383 (1992).		
	C19	CARR et al., "Novel Electrochemical Sensors for Neutral Molecules," Chem. Commun., 1649-1650 (1997).		
	C20	CARTER et al., "Voltammetric Studies of the Interaction of Metal Chelates with DNA. 2. Tris-Chelated Complexes of Cobalt(III) and Iron(II) with 10-Phenanthroline and 2,2'-Bipyridine," J. Am. Chem. Soc., 111:8901-8911 (1989).		
	C21	CHANG, I-JY et al., "High-Driving-Force Electron Transfer in Metalloproteins: Intramolecular Oxidation of Ferrocyclochrome c by Ru(2,2'-bpy) <sub>2</sub> (im)(His-33) <sup>3+</sup> ," J. Am. Chem. Soc., 113:7056-7057 (1991).		
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Sheet	6	of	11	Attorney Docket Number	A-674992-2/RFT/RMS/RMK

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	C25	CLERY, "DNA Goes Electric," <i>Science</i> , 267:1270 (1995).	
	C26	<i>Commerce Business Daily Issue of September 26, 1996 PSA#1688.</i>	
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	C37	DURHAM, B. et al., "Photoinduced Electron-Transfer Kinetics of Singly Labeled Ruthenium Bis(bipyridin) Dicarboxybipyridine Cytochrome c Derivatives," <i>Biochemistry</i> , 28:8659-8665 (1989).	
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	C42	FOTIN, A. et al., "Parallel Thermodynamic Analysis of Duplexes on Oligodeoxyribonucleotide Microchips," <i>Nucleic Acids Research</i> , 216(6):1515-1521 (1998).		
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	C53	HASHIMOTO et al., "Sequence-Specific Gene Detection with a Gold Electrode Modified with DNA Probes and an Electrochemically Active Dye," <i>Anal. Chem.</i> 66:3830-3833 (1994).		
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	C58	HO, "DNA-Mediated Electron Transfer and Application to 'Biochip' Development," <i>Abstract. Office of Naval Research</i> (Report Date: July 25, 1991) 1-4, RR04106.		
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	C60	HSUNG et al., "Synthesis and Characterization of Unsymmetric Ferrocene-Terminated Phenylethynyl Oligomers," <i>Organometallics</i> , 14:4808-4815 (1995).		
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	C63	JOHNSTON et al., "Trans-Dioxorhenium(V)-Mediated Electrocatalytic Oxidation of DNA at Indium Tin-Oxide Electrodes: Voltammetric Detection of DNA Cleavage in Solution," <i>Inorg. Chem.</i> , 33:6388-6390 (1994).	
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	C78	MCGEE et al., "2'-Amino-2'-deoxyuridine via an Intramolecular Cyclization of a Trichloroacetimidate," <i>J. Org. Chem.</i> , 61:781-785 (1996).	
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	C87	MIRZABEKOV, A. et al., "DNA Sequencing by Hybridization - a Megasequencing Method and a Diagnostic Tool," <i>Tibtech</i> , 12:27-32 (1994).	
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	C94	PARINOV, S., "DNA Sequencing by Hybridization to Microchip octa- and Decanucleotides Extended by Stacked Pentanucleotides," <i>Nucleic Acids Research</i> , 24(15):2998-3004 (1996).	
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	C96	PROUDNIKOV, D. "Immobilization of DNA in Polyacrylamide Gel for the manufacture of DNA and DNA-Oligonucleotide Microchips," <i>Analytical Biochemistry</i> , 259:34-41 (1998).	
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			First Named Inventor	<b>Kayyem</b>	
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